

WHAT IS CLAIMED IS:

1 1. A method comprising:
2 (a) reacting a grafted microfine polymer powder with a
3 cyclodextrin to form a cyclodextrin-attached grafted polymer; and
4 (b) dispersing the cyclodextrin-attached grafted polymer in a base
5 polymer.

1 2. The method of claim 1 wherein the base polymer is selected
2 from the group consisting of polyolefins, polystyrene, and mixtures thereof.

1 3. The method of claim 2 wherein the polyolefin is selected from
2 the group consisting of homopolymers and copolymers of ethylene and propylene.

1 4. The method of claim 1 wherein from about 1 to about 30 percent
2 by weight of the cyclodextrin-attached grafted polymer is dispersed in from about
3 99 to about 70 percent by weight of the base polymer.

1 5. The method of claim 1 wherein the grafted microfine polymer
2 powder is a microfine polymer onto which an ethylenically unsaturated monomer
3 has been grafted.

1 6. The method of claim 5 wherein the ethylenically unsaturated
2 monomer is selected from the group consisting of unsaturated carboxylic acids,
3 unsaturated carboxylic acid derivatives, unsaturated alkoxy silanes, and mixtures
4 thereof.

1 7. The method of claim 6 wherein the ethylenically unsaturated
2 monomer is maleic anhydride.

1 8. The method of claim 1 wherein the grafted microfine polymer
2 powder is made by a process comprising:

3 (a) heating a mixture comprising a carboxylic acid-functionalized
4 polyolefin, a nonionic surfactant, and a polar liquid medium containing at least 50
5 wt. % water to a temperature above the melting point of the polyolefin to form a
6 dispersion of liquified polyolefin in the polar liquid medium; and

7 (b) cooling the dispersion below the melting point of the polyolefin
8 to produce a carboxylic acid-functionalized polyolefin powder.

1 9. The method of claim 8 wherein the polyolefin is grafted.

1 10. The method of claim 9 wherein the weight ratio of polar liquid
2 medium to grafted polyolefin is from 1:1 to 9:1 and the weight ratio of nonionic
3 surfactant to grafted polyolefin is from 0.05:1 to 5:1.

1 11. The method of claim 10 wherein the grafted polyolefin is
2 polyethylene grafted with from about 0.5 to about 5 wt. % maleic anhydride, and the
3 nonionic surfactant is a block copolymer of ethylene oxide and propylene oxide.

1 12. The method of claim 11 wherein the grafted polyethylene is high
2 density polyethylene (HDPE) or linear low density polyethylene (LLDPE) grafted
3 with from about 1 to about 4 wt. % maleic anhydride.

1 13. The method of claim 12 wherein the grafted HDPE and LLDPE
2 have a melt index (MI) from 5 to 2000 g/10 min.

1 14. The method of claim 11 wherein the nonionic surfactant contains
2 at least 50 wt. % of ethylene oxide recurring units and has a number average
3 molecular weight of at least 4500.

1 15. The method of claim 1 wherein the cyclodextrin is a cyclodextrin
2 inclusion complex.

1 16. A dispersed cyclodextrin inclusion complex made by the method
2 of claim 15.

1 17. A dispersed cyclodextrin-containing polymer made by a method
2 comprising:

3 (a) reacting a grafted microfine polymer powder with a cyclodextrin
4 inclusion complex to form a cyclodextrin-attached grafted polymer; and

5 (b) dispersing the cyclodextrin-attached grafted polymer in a base
6 polymer.

1 18. The method of claim 17 wherein the base polymer is selected
2 from the group consisting of polyolefins, polystyrene, and mixtures thereof.

1 19. The method of claim 18 wherein the polyolefin is selected from
2 the group consisting of homopolymers and copolymers of ethylene and propylene.

1 20. The method of claim 17 wherein from about 1 to about 30
2 percent by weight of the cyclodextrin-attached grafted polymer is dispersed in from
3 about 99 to about 70 percent by weight of the base polymer.